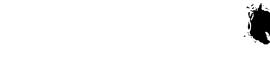**Patent Claims**

1. Method for equalizing a received signal in a digital receiver with the aid of a DFE (Decision Feedback Equalizer) structure, the received signal being based on a signal constellation which is one-dimensional or can be transformed to be one-dimensional, characterized in that the coefficients of the DFE are fixed so as to minimize the expected value of the squared real part of the error in the received signal.

2. Method according to Claim 1, characterized in that the signal constellation corresponds to a BPSK modulation, and in that the coefficients of the DFE are fixed as follows:

$$(I) \quad h^R_{M+1-i} = \frac{\sigma^2}{2} f^R_i + \sum_{m=1}^{M} f^R_m \sum_{n=1}^{M} h^R_{n+1-i} h^R_{n+1-m} - \sum_{m=1}^{M} f^I_m \sum_{n=1}^{M} h^R_{n+1-i} h^I_{n+1-m}$$

$$- h^I_{M+1-i} = \frac{\sigma^2}{2} f^I_i - \sum_{m=1}^{M} f^R_m \sum_{n=1}^{M} h^I_{n+1-i} h^R_{n+1-m} + \sum_{m=1}^{M} f^I_m \sum_{n=1}^{M} h^I_{n+1-i} h^I_{n+1-m}$$

$$(II) \quad g^R_{i-M} = -\sum_{m=1}^{M} f^R_m h^R_{i+1-m} - f^I_m h^I_{i+1-m}$$

3. Method according to Claim 1, characterized in that the signal constellation corresponds to a GMSK or an OQPSK modulation, and in that the samples are rotated in the receiver with a phase j^{-i}, i denoting a sequential index of the sample.

4. Circuit arrangement of a DFE (Decision Feedback Equalizer) for equalizing a received signal in a digital receiver, the received signal being based on a signal constellation which is one-dimensional or can be transformed to be one-dimensional, characterized in that [lacuna] a circuit for calculating the coefficients of the DFE in such a way that the expected

value of the squared real part of the error in the received signal is a minimum.